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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,745	02/20/2002	Takayuki Koda	219843US0	3447

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EXAMINER

FRONDA, CHRISTIAN L

ART UNIT	PAPER NUMBER
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1652

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/077,745	<b>Applicant(s)</b> KODA ET AL	
	<b>Examiner</b> Christian L. Fronda	<b>Art Unit</b> 1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 28-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 03/16/2005 has been entered.
2. The rejections under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) stated in the previous Office Action are moot in view of applicants' cancellation of claims 1-27 and have been withdrawn.
3. Claims 28-32 are under consideration in this Office Action.

#### ***Claim Rejections - 35 U.S.C. § 112, 2nd Paragraph***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.  
Claim 30 recites the limitation "wherein a pH suitable for L-glutamic acid production" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 U.S.C. § 112, 1st Paragraph***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:  
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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7. Claims 28-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are genus claims that are directed toward any fertilizer comprising any cell of the strain *Enterobacter agglomerans*. The scope of the claims includes many strains with widely differing biological properties. Furthermore, the genus is highly variable because a significant number of differences between genus members exists. The specification only discloses a single member of the claimed genus which is a deposited *Enterobacter agglomerans* AJ13355 strain of accession number of FERM BP-6614.

The specification fails to define those biological properties that are commonly possessed by members of the claimed genus that distinguish them from other strains of *Enterobacter agglomerans*. Thus, one skilled in the art cannot visualize or recognize the identity of the members of the claimed genus.

Furthermore, the claims are rejected under 35 U.S.C. 112, first paragraph, since new matter has been introduced into the claims. Claim 28 is directed toward a fertilizer and recites the limitation in lines 6-7: "wherein the fertilizer comprises cells of a strain of *Enterobacter agglomerans* having L-glutamic acid-producing ability". This limitation is not described by the specification and claims as originally filed.

MPEP 2163.06 states: "If new matter is added to the claims, the examiner should reject the claims under 35 U.S.C. 112, first paragraph - written description requirement. *In re Rasmussen*, 650 F.2d 1212, 211 USPQ 323 (CCPA 1981)."

### *Claim Rejections - 35 U.S.C. § 102/103*

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 28-32 are rejected under 35 U.S.C. 102(b) as anticipated by Moriya et al. (EP 0955368) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moriya et al. (EP 0955368) in view of Ter-Sarkesyan et al. (SU 1637335), Erceg et al. (Aust J Biotechnol. 1990 Jul;4(3):177-82, 200), and Romaneko et al. (Mikrobiol Z. 2000 Jul-Aug;62(4): 29-37).

MPEP §2113 states:

“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

In view of this, the claims will only be examined as being directed to any organic nitrogen-containing composition comprising any fermentation mother liquor and any cells of any strain of *Enterobacter agglomerans* having L-glutamic acid producing ability. No patentable weight is given to the limitations of claim 30 which is directed toward pH conditions for obtaining the claimed mother liquor recited in claim 28.

Moriya et al. teach the *Pantoea agglomerans* strain IAM1595/RSFCPG was cultured in a medium comprising 40 g/L glucose, 20 g/L ammonium sulfate, 0.5g/L magnesium sulfate heptahydrate, 0.02g/L ferrous sulfate heptahydrate, 0.02g/l manganese sulfate tetrahydrate, 0.72

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mg/l zinc sulfate dehydrate, and 0.64 mg/l copper sulfatepentahydrate, and after cultivation was completed 5.0 g/L of L-glutamic acid was found in the cultured medium (see entire publication, especially p. 8, lines 23-31, and Table 1).

It is known in the art that *Pantoea agglomerans* is another name for *Enterobacter agglomerans* (see enclosed entry of *Pantoea agglomerans* in the Taxonomy Browser from National Center for Biotechnology Information (NCBI))

Thus, the teachings of Moriya et al. anticipate the claims since the cultured medium, which is deemed to be a fermentation mother liquor, contains cells of *Pantoea agglomerans* strain IAM1595/RSFCPG that produces L-glutamic acid; the said *Pantoea agglomerans* strain IAM1595/RSFCPG is expected to metabolize L-glutamic acid at a saturation concentration and has the ability to accumulate L-glutamic acid at a saturation concentration and/or accumulate L-glutamic acid in an amount exceeding the saturation concentration since 5.0 g/L of L-glutamic acid was found in the cultured medium thus meeting the limitations of claim 29; the cultured medium is expected to have not less than 6% by mass of organic nitrogen with respect to total solid matter since the said cells of *Pantoea agglomerans* strain IAM1595/RSFCPG produce L-glutamic acid and nitrogen by products, thus meeting the limitations of claim 31; and the cultured medium is expected to have 500% or less by mass of sulfate anion with respect to total nitrogen since ammonium sulfate, magnesium sulfate heptahydrate, ferrous sulfate heptahydrate, manganese sulfate tetrahydrate, zinc sulfate dehydrate, and copper sulfatepentahydrate was added to the culture medium for fermentation of the said *Pantoea agglomerans* strain IAM1595/RSFCPG, thus meeting the limitations of claim 32

Alternatively, the claims are obvious over Moriya et al. in view of Ter-Sarkesyan et al. (SU 1637335), Erceg et al. (Aust J Biotechnol. 1990 Jul;4(3):177-82, 200), and Romaneko et al. (Mikrobiol Z. 2000 Jul-Aug;62(4): 29-37)

Ter-Sarkesyan et al. teach a method for extracting glutamic acid from culture broth comprising acidification with nitric acid and neutralization of the mother liquor with KOH to yield a nitrogen fertilizer (see attached Abstract). This reference of record was attached to the Office Action dated 01/05/2004.

Erceg et al. teach that microorganisms can supplement chemical fertilizers and pesticides in many agricultural cropping systems, where such microorganisms can be useful as biofertilizers and in microbial control of phytopathogens (see entire publication, especially pp. 177-179).

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Romaneko et al. teach that *Pantoea agglomerans* inhibit the growth of phytopathogenic bacteria and micromycetes (see Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method taught by Ter-Sarkesyan et al. to the cultured medium taught by Moriya et al. to make a nitrogen containing fermentation mother liquor, and then add *Pantoea agglomerans* strain IAM1595/RSFCPG taught by Moriya et al. to the mother liquor thereby making the claimed organic-nitrogen containing fertilizer comprising fermentation mother liquor and cells of a strain of *Enterobacter agglomerans* having L-glutamic acid-producing ability. One of ordinary skill in the art at the time the invention was made would have been motivated to do this since Erceg et al. teach that microorganisms can be useful as biofertilizers and in microbial control of phytopathogens and Romaneko et al. teach that *Pantoea agglomerans* inhibits the growth of phytopathogenic bacteria.

Since the *Pantoea agglomerans* strain IAM1595/RSFCPG taught by Moriya et al. is able to produce 5.0 g/L of L-glutamic acid in culture medium using glucose as a carbon source, in absence of facts to the contrary, the said *Pantoea agglomerans* strain IAM1595/RSFCPG is expected to metabolize L-glutamic acid at a saturation concentration and has the ability to accumulate L-glutamic acid at a saturation concentration and/or accumulate L-glutamic acid in an amount exceeding the saturation concentration, thus meeting the limitations of claim 29. Furthermore, since the Patent Office does not have the facilities for examining and comparing the claimed *Enterobacter agglomerans* to the *Pantoea agglomerans* strain IAM1595/RSFCPG taught by Moriya et al., the burden is on applicant to show that the prior art *Pantoea agglomerans* strain IAM1595/RSFCPG is different from the claimed *Enterobacter agglomerans*. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

This made fertilizer is expected to have not less than 6% by mass of organic nitrogen with respect to total solid matter since the method taught by Ter-Sarkesyan et al. yields a nitrogen containing fertilizer, thus meeting the limitations of claim 31. This made fertilizer is expected to have 500% or less by mass of sulfate anion with respect to total nitrogen since ammonium sulfate, magnesium sulfate heptahydrate, ferrous sulfate heptahydrate, manganese sulfate tetrahydrate, zinc sulfate dehydrate, and copper sulfate pentahydrate was added to the culture medium for fermentation of the *Pantoea agglomerans* strain IAM1595/RSFCPG taught by Moriya et al., thus meeting the limitations of claim 32.

Thus, the claimed invention was within the ordinary skill in the art to make and use at the time was made, and was as a whole clearly prima facie obvious.

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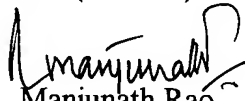
*Conclusion*

10. No claim is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian L Fronda whose telephone number is (571)272-0929. The examiner can normally be reached Monday-Friday between 9:00AM - 5:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura N Achutamurthy can be reached on (571)272-0928. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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